

CLAIMS

1. For a friction drive in an earthworking machine including a shaft rotatable about an axis and engaging the outer periphery of a wheel, a friction enhancer comprising a tubular member adapted to be removably and slideably received on the shaft parallel to the axis, with the tubular member including an outer periphery having noncircular cross sections perpendicular to the axis, with the tubular member adapted to be prevented from rotating relative to the shaft.

2. The friction enhancer of claim 1 with the wheel being a pneumatic wheel.

3. The friction enhancer of claim 2 with the outer periphery having square cross sections perpendicular to the axis.

4. The friction enhancer of claim 3 with the tubular member having an inner periphery having circular cross sections perpendicular to the axis, with the tubular member being in the form of square stock which is cut and drilled.

5. The friction enhancer of claim 4 further comprising a spring pin extending through the tubular member and the shaft at a nonparallel angle to the axis.

6. The friction enhancer of claim 3 with the wheel being pivotably mounted to a frame parallel to and spaced from the axis of the shaft and a rotational axis of the wheel.

7. Earthworking machine comprising, in combination: a movably supported frame; a drive shaft rotatably mounted to the frame about a shaft axis and adapted to be rotated; an axle assembly pivotably mounted to the frame about an axle axis parallel to the shaft axis; at least one wheel rotatably mounted to the axle assembly about a wheel axis spaced from and parallel to the shaft axis and the axle axis, with the axle assembly being pivotable between a transport position and a working position, with the wheel having an outer periphery spaced from the drive shaft in the transport position and engaging the drive shaft in the working position, with the wheel being driven by the drive shaft when rotated.

8. The earthworking machine of claim 7 further comprising, in combination: a friction enhancer removably received in a nonrotatable manner on the shaft, with the shaft with the friction enhancer received thereon including an outer periphery having noncircular cross sections perpendicular to the shaft axis.

9. The earthworking machine of claim 8 with the friction enhancer comprising a tubular member slideably received on the shaft.

10. The earthworking machine of claim 9 with the tubular member including the outer periphery having square cross sections perpendicular to the shaft axis.

11. The earthworking machine of claim 7 further comprising, in combination: an adjuster lever pivotably mounted relative to the frame about a lever axis parallel to the shaft axis, the axle axis, and the wheel axis, with the lever having an end operatively connected to the axle assembly.

12. The earthworking machine of claim 11 further comprising, in combination: a trigger slideably mounted to the lever for movement between an engaged position and a disengaged position, with the trigger being biased to the engaged position; a first notch fixed relative to the frame for receiving the trigger in the engaged position when the lever is in the transport position and a second notch fixed relative to the frame for receiving the trigger in the engaged position when the lever is in the working position.

13. The earthworking machine of claim 12 with the lever being operatively connected to the axle assembly by a bar pivotably connected to the end of the lever and pivotably connected to the axle assembly.

14. Frame for an earthworking machine comprising, in combination: first and second planar side plates, with each side plate having an upper edge and a back edge; a frame plate bent generally perpendicular to the upper edge of one of the side plates, with the frame plate having a free edge welded to the upper edge of the other of the side plates; and an end plate bent generally perpendicular to the back edge of one of the side plates, with the end plate having a free edge welded to the back edge of the other of the side plate, with the plates being interconnected together in a three dimensional configuration without fasteners and with the first and second side plates, the frame plate, and the end plate being formed from two planar elements.

15. The frame of claim 14 with the frame plate and the end plate bent relative to the first side plate and the free edges being welded to the second side plate.

16. The frame of claim 15 with the frame plate having a rear edge and with the end plate having a top edge, with the rear edge being welded to the top edge.

17. The frame of claim 16 further comprising, in combination: a handle tube; an opening at the rear edge for slideably receiving the handle tube; and first and second tabs cut

from and bent relative to the end plate and spaced for abutting opposite sides of the handle tube received in the opening.

18. The frame of claim 16 further including a mount plate bent generally perpendicular to the upper edge of the first side plate, with the mount plate including a free edge welded to the upper edge of the second plate, with the mount plate being spaced from the frame plate perpendicular to the mount and frame plates and spaced from the frame plate perpendicular to the end plate.

19. Method for forming a frame comprising:

obtaining first and second planar elements each having an opening therein;

bending a frame plate generally perpendicular to one of the first and second planar elements, with the frame plate having a free edge;

bending an end plate generally perpendicular to one of the first and second planar elements, with the end plate having a free edge;

aligning the openings of the first and second planar elements;

welding the free edge of the bent frame plate to the other of the first and second planar elements while the openings are aligned; and

welding the free edge of the bent end plate to the other of the first and second planar elements while the openings are aligned.

20. The method of claim 19 with the frame plate having a rear edge and the end plate having a top edge, with the method further comprising welding the rear edge to the top edge while the openings are aligned

21. The method of claim 20 with bending the frame plate comprising bending the frame plate generally perpendicular to the first planar element, and with bending the end plate comprising bending the end plate generally perpendicular to the first planar element.

22. Connection comprising, in combination: a first tube having an inner periphery and an outer periphery; a first aperture formed in the first tube between the inner and outer peripheries; a second tube having an outer periphery of a size for slideable receipt in the inner periphery of the first tube; a bore formed in the second tube aligned with the opening in the first tube when the second tube is slideably received in the first tube; a lock plate held relative to the outer periphery of the first tube to define a gap therebetween; a second aperture formed in the lock plate; a threaded lock extending through the first and second

openings, with the threaded lock being threadably received in one of the first tube and the lock plate; and a pin located in the gap and extending radially from the lock, with the pin preventing the lock from being threaded out of the said one of the first tube and the lock plate, with the lock being insertable into the bore to prevent sliding of the second tube relative to the first tube and being removable from the bore to allow sliding of the second tube relative to the first tube.

23. The connection of claim 22 with the bore being threaded to threadably receive the lock.

24. Control assembly for an earthworking machine comprising, in combination: a U-shaped handlebar including first and second legs extending from opposite sides of a center, with the first and second legs and the center extending generally horizontally above the earth and with the first and second legs extending behind the center; and a U-shaped control including first and second leg portions extending from opposite sides of a center portion, with the U-shaped control having a shape and size corresponding to the U-shaped handlebar, with the center portion being pivotably mounted relative to the U-shaped handlebar about an axis spaced in front of and above the center of the U-shaped handlebar, with the U-shaped control being pivotal between an unactuated position with the leg portions extending at an acute angle upward relative to the legs of the U-shape handlebar and an actuated position with the leg portions engaging the legs of the U-shaped handlebar.

25. The control assembly of claim 24 further comprising, in combination: a jacketed cable adapted to be connected to a throttle for an engine of the earthworking machine; and a spring adapted to be connected to the throttle for biasing the U-shaped control from the actuated position towards the unactuated position.

26. Assembly for an earthworking machine comprising, in combination: a handlebar having a mast; a handlebar mount, with the mast of the handlebar being removably connected to the handlebar mount in a working position and in a storage position, with the handlebar in the working position being positioned for gripping by an operator while operating the earthworking machine, and with the mast in the storage position being positioned over the earthworking machine for lifting and hauling.

27. The assembly of claim 26 with the handlebar being generally U-shaped and including first and second legs extending from opposite sides of a center, with the mast

extending from the center, with the first and second legs extending generally horizontally rearward and the center portion extending generally horizontally in the working position, with the first and second legs extending forward and on opposite sides of the earthworking machine in the storage position.

28. The assembly of claim 27 with the mast including a first linear portion having a lower end and an upper end, with the center being spaced from the upper end and extending generally perpendicular to the first linear portion, with the first linear portion being removably connected to the handlebar mount by being slideably connected generally vertically to the handlebar mount in the working position, with the first linear portion being removably connected to the handlebar mount by being slideably connected at an acute angle to vertical to the handlebar mount in the storage position.

29. The assembly of claim 28 with the mast including a second linear portion extending from the center of the handlebar at an obtuse angle relative to the first and second legs of the handlebar and extending from the first linear portion at an obtuse angle.

30. The assembly of claim 29 with the handlebar mount being a first tube having an inner periphery and an outer periphery; a first aperture formed in the first tube between the inner and outer peripheries, with the first linear portion having an outer periphery of a size for slideable receipt in the inner periphery of the first tube; a bore formed in the first linear portion aligned with the opening in the first tube when the first linear tube is slideably received in the first tube; a lock plate held relative to the outer periphery of the first tube to define a gap therebetween; a second aperture formed in the lock plate; a threaded lock extending through the first and second openings, with the threaded lock being threadably received in one of the first tube and the lock plate; and a pin located in the gap and extending radially from the lock, with the pin preventing the lock from being threaded out of the said one of the first tube and the lock plate, with the lock being insertable into the bore to prevent sliding of the first linear portion relative to the first tube and being removable from the bore to allow sliding of the first linear portion relative to the first tube.

31. Assembly for an earthworking machine comprising, in combination: a handlebar being generally U-shaped and including first and second legs extending from opposite sides of a center; a mast extending from the center and including a first linear portion having a lower end and an upper end, with the center being spaced from the upper

end and extending generally perpendicular to the first linear portion; and a handlebar mount, with the first linear portion being slideably connected generally vertically to the handlebar mount with the first and second legs extending generally horizontally rearward and the center portion extending generally horizontally in the working position, with the first linear portion being slideably connected at an acute angle to vertical to the handlebar mount with the first and second legs extending forward and on opposite sides of the earthworking machine in the storage position.